

# Z88 EPROM

October 1990

Vol.4 No.8

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# Club Addresses

All articles for **Z88 EPROM** and any membership matters (except Software Library) should be sent to:

**Z88 USERS' CLUB**  
**68 WELLINGTON STREET**  
**LONG EATON**  
**NOTTINGHAM**  
**NG10 4NG**

All requests for software from the Club Software Library, (but not special offers), items for inclusion in the Library, and EPROMs for erasure should be sent to:

**THE SOFTWARE LIBRARY**  
**Z88 USERS' CLUB**  
**3/8 JENNER ROAD**  
**GUILDFORD**  
**SURREY**  
**GU1 3PL**

Please note that the **Library** address is the one to use when sending for a list of Library programs - this list is **not** available from the main Club address. Be sure to enclose £1 plus a SAE for the list.

The Club **CLI** Library is run by:

**MICHAEL HEY**  
**18 WOODSIDE ROAD**  
**SANDIACRE**  
**NOTTINGHAM**  
**NG10 5GP**

Any **CLI's** for the Library, requests for **CLI's** and the list of **CLI** programs should be sent to Michael Hey.

ALWAYS include your Membership Number with any correspondence. This is not just to be awkward - now the Club is large it can be very time-consuming searching the database for a member's number. Your number is printed on the address label of each issue of **Z88 EPROM**. Please be sure to enclose a stamped-addressed envelope with anything needing a reply.

# Editorial

Late again!

My only excuse this time is that I have spent some time in bed this last month with back trouble - caused by (incorrectly) lifting a heavy object in my second floor office on a Sunday afternoon. Crack it went, and all I could do was hit the deck, the pain was so bad. In fact it took painkillers and more than an hour for me to summon the courage to glide gracefully(!) down the stairs and into bed, where I vegetated for several days.

Thankfully, the back is now recovered (**back** to normal?), and I am just careful about how I go about anything remotely physical. (Those of you who have met me will know that I am not really suited to physical pursuits anyway!)

Perhaps the more cynical among you are now saying "I don't know how he thinks up these pathetic excuses" - shall we just say I have a gift. (and a sore back...)

I am pleased to say that my little moan about the lack of response to the Workshop Day had the desired effect. As I write this we have 72 members attending; still not a vast number, but considerably better than the 20 or so at the time of the moan. In the next issue I will be reporting on the day at Milton Keynes, so the rest of you can kick yourselves for missing such a useful event!

Elsewhere in this issue you will find details of the exhibitions where the Club will have a presence. Please try and come along and meet us if you can - there will be the full range of User Club spares, binders and back issues for sale, as well as the usual mine of information!

As you will remember from last time, I was due to visit CCL on 17th September, and this time I actually made it!

I met with Roger Flack, the marketing man at Cambridge, and the new MD, Mike Tilley. Feedback from the meeting was generally very positive. It appears that CCL had been going through an uncertain time during the early part of the year, and the uncertainty was resolved when an American company made a large injection of capital, apparently in exchange for Clive Sinclair's controlling interest.

The feeling I got from talking to the people at CCL was that they were relieved to have the security of a large US company behind them, and that this security freed them from worrying quite so much about the company, and has allowed them to take a step back and look at new product development, and the marketing policies of the company.

Cambridge are still actively interested in the Z88 and satellite receivers. The much talked-about PC compatible laptop is no longer being developed by CCL, as that technology has been passed to Clive Sinclair for development seperately from any activities of CCL. However, the very good news is that CCL are committed to the Z88 to the extent that they intend to develop a new, improved version of the machine, and they already have the backing of the US parent company for this project.

To this end, CCL want to know what YOU, the user, wants in a new Z88. As an incentive to inventive thoughts, they have offered three prizes, each of £100 worth of Z88 accessories, for the three best entries. See the Competition News section for more details, and get writing!

## New Subscription Rates

Monday 17th September should be christened Black Monday. On this day the postal rates were yet again increased by about 10% across the board. This is the third increase in postage since the Club started, when a second class stamp cost just 13p. The rise of 4p over 3 years may not seem much, but when you consider that we are currently spending about £8000 a year on postage, you can see that the difference is substantial.

Of course postage is not the end of the story. Inflation has probably averaged 8% over the last three years, and this affects all the costs incurred in running the Club - envelopes, printing, coffee and biscuits! Seriously, what all this means is that the time has come for an increase in subscriptions and the price of spares etc. to offset these increases in running costs.

Please bear in mind that these increases will be the first in the cost of each issue of the magazine since the Club was formed in 1987. Also bear in mind that with items such as spares, the heavier items have increased more to pay the extra postage.

I have decided to keep the price of Club Binders at the present level until the New Year, as I have recently taken delivery of another batch of 500 and could do with the space!

In the case of subscriptions, because all the elements of the magazine have increased several times over the last three years, I am afraid the postal increases were the last straw. I have thought long and hard before increasing the price, not wanting to drive away any existing members, nor deter new members from joining.

The new UK sub will increase by £2 to £11.95 for 10 issues. This may seem a lot, but I needed to fix a price that could be maintained for at least a year, no mean feat with inflation currently nearing 10%. In fact the £2 increase averages out at just over 6% a year over the last three years. Increases on overseas subs are proportionately more due to the higher postal costs.

The new rates for UK and overseas subscriptions are below.

|                               | 5 Issues | 10 Issues |
|-------------------------------|----------|-----------|
| U.K./BFPO/C.I.                | £6.95    | £11.95    |
| Rest of Europe (inc. Eire)    | £9.00    | £17.00    |
| Middle East, America & Africa | £13.00   | £24.00    |
| Elsewhere                     | £14.00   | £26.00    |

For the new Spares prices, which are effective immediately, see the advert elsewhere in this issue.

## Newslines

**TWO NEW BOOKS** have recently appeared for the Z88. From the DABS PRESS comes "Z88 PipeDream - A Dabhand Guide" by John Allen. Priced at £14.95, this is a book solely about PipeDream, not even attempting to cover the other functions of the Z88. A full review of this comprehensive 240 page volume will appear soon. The other new book is from SIGMA PRESS, and is called "Z88 Portable Computing", written by Dave Osborne. Priced at £12.95, this 225 page book covers all the Z88s facilities. Again, expect a review soon.

**RANGER COMPUTERS** are now shipping version 2 of their RangerDisk Z88 disk drive. Version 2 features revised software which supports DOS 3.3, the main additional feature being full support of subdirectories.

The price remains the same at £450 plus delivery and VAT. Existing users may have version 1 RangerDisks upgraded free of charge. Please contact Ranger on 0604 791064 for full details.

**RUMOUR TIME AGAIN.** New Computer Express, the sole weekly retail computer magazine since the closure of Popular Computing Weekly, recently reported that Amstrad are working on a "Z88-killer" - a portable word processor in the same vain as the Z88 and Tandy WP-2. Although officially denied by Amstrad, it seems the product may be launched next year at around £199. Let's hope that CCL will have the new Z88 out by then, in which case this new Amstrad, if it exists, won't stand a chance!

**FOLLOWING ON** from the Newslines piece last time about the Tandy WP-2, the reviews seem to be getting worse! A recent piece in The Guardian newspaper (11th October) virtually slated the machine in a head-to-head with the Z88. One of the most amazing facts to come out of this review (amazing to me, at least) is that the £ sign is not to be found on the WP-2 keyboard, and the £ sign has to be generated from a shadow graphical keyboard using no less than **five** keystrokes! Seems like just the machine for those price lists! There is still no sign of the WP-2 in my local Tandy; they expect them "in November".

## Helpline

If you have a technical query, write to one of our Helpliners listed below. Please note that you should include a stamped addressed envelope or sufficient return postage for your reply.

**CLI Files** - Contact Michael Hey by post only at: 18 Woodside Road, Sandiacre, Nottingham. NG10 5GP

**Z88 to Amstrad PCW Link** - Please write in the first instance to: Mr A West, 16 Southway, Burgess Hill, Sussex. RH15 9ST.

**zBASE, CLI and all Wordmongers products except TX and Comms software** - Contact Jason Crook (ex of wordmongers) at 4 Salisbury Close, Princes Risborough, Bucks. HP17 0JF. Telephone 08444 7075. I will also write to order in zBASE.

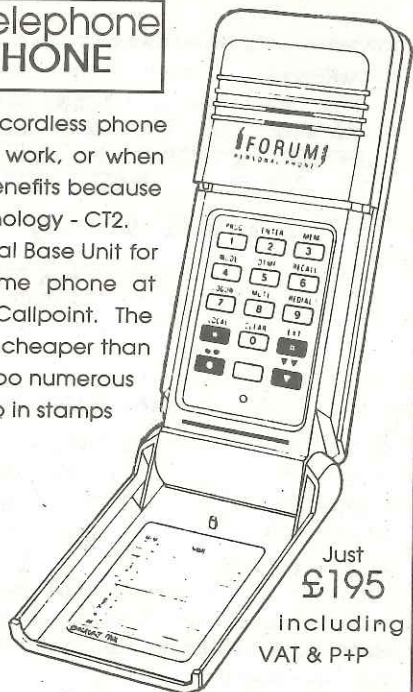
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# RANGER

## COMPUTERS LTD

The Z88 Specialists

**NEW!**

**Complete Z88 UserClub Library FREE with RangerDisk.**

By kind agreement of the The Z88 Users Club, we have been able to arrange for the entire\* Z88 program library to be included on two 3.5" disks ENTIRELY FREE with each RangerDisk purchased. This facility is available to Z88 User Club members ONLY - please quote your membership number when ordering.

When RangerDisk was launched last year, it was aimed primarily at business users with large data volumes, where data transfer to corporate PC systems would be an important consideration. Many such users, like Burmah Castrol and ICI for instance, now use RangerDisk. However, we have been delighted with the number of private customers who have also bought the system.

As one of our private customers recently told us: "RangerDisk solved an awkward dilemma about the future of my Z88 - the availability of virtually unlimited storage and fast file transfer avoided the need to move up to a PC. RangerDisk allows me to go on enjoying the benefits of true portability in the Z88 with the confidence and security of disk storage and backup at home."

We are now shipping RangerDisk version 2, which fully supports sub-directories and is compatible with PC DOS 3.3 and up. RangerDisk is available from stock at £450.00 complete with DiskFiler EPROM for Z88, connecting cable and manual. The optional mains adaptor is £17.50 and p & p is £4.50.

In a separate development, we can now supply a PC driver package that allows RangerDisk to become an external 3.5" floppy drive for any PC or compatible, connecting via the serial port. The driver package costs £30.00, p & p £2.50, and supports all DOS commands.

\* some programs cannot be included because they are not compatible with PC format.

### HARDWARE PRODUCTS

#### **Battery Pack**

Rechargeable external battery pack, connects to Z88 mains adaptor socket, gives correct voltages and 8-12 Hr continuous operation, recharges overnight. Supplied complete with UK mains charger at £37.50. P & P £3.50.

#### **ADAM**

(Analogue Data Acquisition Module) is an analogue-to-digital converter module for the Z88. It provides 8 analogue input channels with a +/- 2v range and a resolution of 100  $\mu$ v. Power is supplied externally, or from a modified version of the Z88 supplied by Ranger. ADAM is available from stock at £250.00.



## Z88 DATA LOGGER

Designed for use with our ADAM A/D converter, this new application allows Z88 to become a versatile data logger.

Features include:

- \* On screen graphical display of data during logging
- \* Up to 8 channels
- \* Direct writing of Lotus or dBase files
- \* Logging intervals from 1 sec to 12 hrs

The Data Logger software is supplied on EPROM at £75.00, p & p £2.50. Note that ADAM and Ranger Z88-2 are required.

## Hardcase

A ruggedised housing for the Z88. Developed by the New Zealand Ministry of Agriculture for recording fish catches at Sea, **Hardcase** enables a standard Z88 to be used in extreme environmental conditions. **Hardcase** is available at £495.00.

## Z88

We keep the entire range of Z88 hardware and most supporting items in stock. Please enquire for details and prices.

## SOFTWARE PRODUCTS

**RangerLink** RangerLink is designed for general purpose PC to Z88 communications and features much faster data rates than other PC-to-Z88 products, multiple file transfers and true data transparency.

RangerLink consists of an application EPROM for the Z88, a PC disk (please specify 3.5" or 5.25") and a connecting cable (please specify 9 or 25 pin). The application is driven from the Z88, which displays "windows" showing the current PC and Z88 directories, together with a command menu.

The EPROM and disk also contain the original PC LinkII software for compatibility with earlier systems.

RangerLink is available now at £49.50. P & P £2.50.

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**The Innovation Centre**  
**Boughton Green Road**  
**Moulton Park**  
**Northampton NN2 7AH**



**Telephone: (0604) 791064**  
**Fax: (0604) 791114**  
**Telex: 94017588 TBIC G**

**zBASE** - Help on commands and programming. I can accept info/programs on paper, EPROM, zTape cassettes or IBM disk. Contact Robin Jarvis, 27 Gloucester Road, Waterlooville, Hants. PO7 7BJ.

**Z88 to Amstrad CPC Link** - Contact Duncan W. Kennedy at 32 Otterston Grove, Dalgety Bay, Fife. KY11 5PA.

**BASIC Programming** - Contact Richard Russell at 59 Campbell Road, Gravesend, Kent. DA11 0JZ.

**Interfacing Z88 to various hardware - Mac, BBC, PADs, also UNIX and C experience** - Contact J.P. Knight Email JANET on jpknight@uk.ac.lut.suna, or snail mail during term time to Room 66, Hazlerigg-Rutland Hall, Loughborough University of Technology, Ashby Road, Loughborough, Leics, LE11 3TZ.

**PipeDream/Diary/General** - Contact Keith Winsor at 13 Swansea Road, Reading, Berks. RG1 8EY. Or Telecom Gold 82:TLR1747.

**Z88-PCW Link** - Using C-Port program. Please contact David Prestage at 47 Knighton Road, Otford, Sevenoaks, Kent. TN14 5LD.

**Anything Educational** - Please contact Bob Shore, 8 Anchor Close, Hathern, Leics. LE12 5HP. Telephone 0509 842670.

**Z88 - Atari ST Links** - Please contact Ian Salmon, 18 Fyllioll Close, E. Hanningfield, Essex. CM3 8UY.

**Machine-code Programming** - Please contact Richard Smith, 29 Sandhouse Crescent, Scunthorpe, South Humberside, DN16 1JF.

**Printer Setups** - Please contact Mr. D. Stewart, 44 Margetts, Hemingford Grey, Huntingdon, Cambs. PE18 9EP. Please note that FULL DETAILS of the problem are needed, including copies of printer interface details and control codes. Be sure to include full return postage if you require any material to be returned.

If you have any area of expertise, and would be willing to offer help to other members, either by letter or telephone, please write to the Club Address on page 2. Send details of your area of knowledge, and how members should contact you.

# Competition News

Two items on the agenda - first, news of a new competition sponsored by CCL as mentioned in this issue's editorial, and secondly, the results of the 'Teeny Tiny Z88 Competition' as announced in Z88 EPROM Vol 4 No 5.

As explained in this month's editorial, Cambridge Computer are very seriously looking at revamping the Z88, and as you are the end users, they want to know what YOU want incorporated in the new machine.

We are looking for new ideas here, but the basic constraints of the present Z88 should be borne in mind. For example, the new machine should be aimed at about the same price area as the current machine, so no bright ideas about a 100 Mbyte hard disk being included! Within the two main constraints of physical size and approximate price, feel free to suggest anything and everything, whether it be hardware or software related.

All entries will be passed on to CCL, and together we will choose three prizewinners - those entries suggesting the most innovative, but practical design improvements. The three winners will each receive Z88 accessories of their choice up to the value of £100.

Get writing! All entries should be sent to the main Club Address on page 2, and should be received by 30th November 1990.

Now onto the results of the Teeny Tiny Z88 Competition. you will remember that the aim of this was to write the smallest Z88 program which has some useful function not built in to the Z88. Response was encouraging, if not overwhelming, and it has been decided that three prizes will be offered.

First prize, a copy of the book "The Cuckoo's Nest", goes to Graham Brand (3772) for his suite of VAT and timer utilities. Runners up prizes of a Z88 Users' Club Binder go to Nick Lewis (2086) for a clever combination of BASIC and machine code, producing a glissade sound from the Z88 speaker; and Ian McAlpine (0884) for his retail price calculator.

The winning programs are listed below:

### **VAT and Timer Utilities - Graham Brand (3772)**

These loop continuously in BASIC while you work elsewhere. An enhancement would be to add ON ERROR CHAIN "FUNKEY.BAS" to allow the ESCAPE key to be used to return to a function key shell.

**ADDVAT.BAS** Adds 15% VAT to a figure 37 bytes

```
5*NAME AddVAT
```

```
10REPEATINPUTV:PRINTV*1.15:UNTILFALSE
```

**SUBVAT.BAS** Takes the 15% VAT off a figure 37 bytes

```
5*NAME SubVAT
```

```
10REPEATINPUTV:PRINTV/1.15:UNTILFALSE
```

**GETVAT.BAS** Returns the 15% VAT to be added to a figure 36 bytes

```
5*NAME GetVAT
```

```
10REPEATINPUTV:PRINTV*.15:UNTILFALSE
```

**VATINC.BAS** Returns the VAT included in a figure 39 bytes

```
5*NAME VATinc
```

```
10REPEATINPUTV:PRINTV-V/1.15:UNTILFALSE
```

### **Timer Utilities**

It is justifiable to leave the \*NAME function out of the following three programs, since they are not a lot of use if you leave BASIC. You could end up with an inedible egg, for instance.

**WATCH.BASPB** Reports seconds passed from R?N to a key press 19 bytes

```
10TIME=0:IFGETPRINTTIME/100
```

**TIMER.BAS** Beeps after the chosen number of seconds 26 bytes

```
10INPUTT:TIME=0:REPEATUNTILT*100<TIME:VDU7
```

**EGG.BAS** Beeps when your egg is ready... 23 bytes

```
10TIME=0:REPEATUNTILTIME>21000:VDU7
```

**Z88 Glissade - Nick Lewis (2086)**

The listing below is not actually my entry but when run it saves my entry as :RAM.1/GLISSADE.BAS which is only 45 bytes long. LOAD and RUN this program and it will play a Glissade. The name displayed in the Index is what the Americans call a screamer, I thought it was an appropriate name as this is exactly what the program does.

```

10 REM 0123456789012345678
20 FOR PASS=0 TO 3 STEP 3
30 P%=PAGE+5:[OPT PASS
40 LD A,(&4B0):LD B,256:DI
50 .mainloop
60 XOR &40:OUT (&B0),A
70 PUSH BC:.loop:DJNZ loop:POP BC
80 DJNZ mainloop
90 EI:RET
100 ]:NEXT PASS
110 *CLI SAVE ":RAM.1/GLISSADE.BAS"~E
120 *CLI DELETE 20,130~E
130 END
140 CALL PAGE+5:*NAME !

```

Finally, as always with programs that incorporate machine code, do not make any typing errors!

**RRP Calculator - Ian McAlpine (0884)**

My program is a very simple but useful application to help shop owners in calculating the retail price of a product. When the program is run, it asks you to input the quantity of the product purchased, followed by the cost price for the total quantity, followed by the percentage markup required. It then displays the RRP of each item, to two decimal places, taking into consideration the markup and VAT at 15%. The VAT rate is declared in the variable "v". This is much faster, easier and more accurate than doing the calculation on a pocket calculator.

```
100SCLI("NAMEPricer");@%=131594:v=15:CLS:REPEAT:
REPEAT:INPUT"Quantity";q:UNTILq>0:REPEAT:INPUT"Cost
Price";c: UNTILc>0:REPEAT:INPUT"%-
MarkUp";m:UNTILm>0:r=c*(1+m/100)*(1+v/100)/
q:PRINT"RRP=£";r:UNTILFALSE
```

The program is 150 bytes long, but could be reduced to 61 bytes by removing the input prompts, input verification loops, the VAT variable and the numerical print field definition. These have been retained because I feel that any reduction should not be to the detriment of the programs usability.

## Diary Dates

Further to my comments about attending more exhibitions, below is a list of events in the near future where the Club will be represented:

**Sunday 4th November 1990** - All Formats Computer Fair. Held at the New Horticultural Hall, Greycoat & Elverton Street, Westminster, London. Times 10am to 5pm. Admission £3.

**Saturday 10th November 1990** - Fourth Alternative Micro Show & Radio Rally. Held at the Bingley Hall, Stafford Show Ground, Stafford. Signposts from J14 M6 of FREE bus from Stafford coach and rail stations. Times 10am - 5pm. Admission adults £2, children £1.

**Saturday 1st December 1990** - Fifth Northern Home Computer Show. Held at Stokes Hall, Church Road, Leyland, Lancashire. Times 10am - 5pm. Admission £1.50.

**Thursday 6th December to Sunday 9th December 1990 inclusive** - The Computer Shopper Show 1990. The BIG one! Due to high costs we will be sharing stand E27 with Ranger Computers. Held at the Wembley Conference Centre, London. Times 10am - 5pm. Admission adults £5 children £3.50. Send for reduced price tickets and avoid queueing - phone the hotline on 051 357 1736.

**Saturday 15th December 1990** - All Formats Computer Fair - see above for other details. As you can imagine, this gruelling campaign of show attendance involves an awful lot of effort, so I hope a lot of you will make the effort to attend the shows and drop in and see us.

# Members' Letters

Mike Hobbs (3297) Basingstoke

Dear Roy,

I was inspired to write this letter by the interesting letter from David McLean because, although I have not had quite the resistance to PCs that David had, I have some similar "success stories".

I work in one of the largest computer companies in the world, as a manager of a small group of engineers and I have used my trusty Z88 at home and at work for over two and half years. No, I wasn't told "NO" to bringing my own PC, I never asked! I simply turned up at meetings with a Z88 instead of a Time Manager (TM).

At first people laughed. They use BIG computers and this little laptop can't be anything more than a toy (not even an executive toy at that). "It doesn't even run MS-DOS". So I ignored the sneers and carried on making notes in my electronic diary. One day the boss said, "Err Mike, seeing as you have this little toy, perhaps you would like to take the minutes for us?" (probably wondering whether he would ever really see them). "OK" I replied. At the end of the two day meeting I went back to my desk, down-loaded the minutes to the mainframe and printed them on the office laser printer. Within three minutes of the end of the meeting I was handing out photocopies of the meeting minutes and had electronically mailed them to the boss's secretary for wider distribution! The attendees, who were still hanging around the coffee machine waiting for their fresh-brew, were quite surprised to say the least.

Budget time is, of course, where the spreadsheet comes into its own. One year the secretary had produced a huge spreadsheet on the mainframe to enable the managers to plan for the next fiscal year. It turned out to be last year's with a few minor modifications. I exported the spreadsheet to the Z88 (after a bit of editing of the formulae) and enhanced it. I fixed a few bugs in it and automated parts of it through lookup tables). At budgetting meetings I was then able to make adjustments on the fly and immediately understand the impact of the changes. This was very successful so, when it came to needing a spreadsheet for some complex salary planning, the boss asked me if I could create a spreadsheet on the

mainframe, similar to my PipeDream one, for all the managers to use. "No problem", I said.

Well, it turned out that it WAS a problem! I up-loaded the PipeDream file to the mainframe and loaded the formulae into the spreadsheet. So far, so good. Then, as I looked at the total expense line I noticed some very peculiar numbers. Further investigation showed errors in the cell calculations. The data was right, the formulae right, but the result was wrong. Anyway, I thought the best thing was to break the formulae down into smaller chunks in intermediate cells. So, I hit the "edit" key to edit the mainframe's spreadsheet and what happened? It crashed! You're not going to believe this, the 180 character formulae, direct from Z88 PipeDream, were too long for the mainframe's spreadsheet to handle!

I don't get quite so many sneers these days but even after well over two years constant daily use at work people still don't believe the Z88 is a REAL computer. Of course, like most mainframes, our mainframe goes down occasionally (usually when the Electricity Board cut the power). When this happens the whole office seems to grind to a halt as people cannot use their office automation system. The office coffee machine then becomes overloaded! However, I take the opportunity to carry on working without batting an eyelid, typing mail messages on the Z88 ready for transmission when the mainframe comes up again. Even when the mains power dies, the Z88 batteries automatically come in to keep me going.

I have OA (office automation) down to a pretty fine art these days. Each day, when I get into the office, I use Ranger's VISION-100 to log the Z88 into the mainframe. I then run a CLI which examines the electronic diary on the mainframe for any new engagements entered by other people (usually the secretary), downloads them as a CLI file and then updates the Z88 diary. As I use the Z88 as the "master diary" the CLI then transmits the new diary data back to the mainframe OA system. Both diaries are then in synchronisation and everyone in the office knows where I am at any time.

Actually, I'm hoping that I will soon be able to offer the CLI files and the appropriate programs to run on the mainframe so that other Z88 User Club members can adapt them to their own use. The problem I currently have is that, being somewhat of a midnight hack, there are a few bugs that still need to be fixed.



Finally, what about getting the rest of the people in the office Z88-ised? Well, since we make computers and the Z88 is someone else's product, we are not allowed to simply go and purchase a whole bunch of them without major justifications to high levels of management. But anyway, one of the people in my group also bought his own Z88 and uses it in much the same way as I do. Also, a few other people in the company have "seen the light" but the vast majority still see the Z88 as a "toy that doesn't even run MS-DOS". But we know better, don't we?

I'd like to suggest that "Z88 success stories" should appear in every issue of Z88 EPROM and then, maybe, we will have some more ammunition to throw at the disbelievers.

## Overheating Z88s

(or A Whole New Meaning to Hot Key Operation!)

**by Alex Gray, Wordworks Ltd**

When a Z88 goes up in smoke (literally!), you think it's bad luck and send it off for repair under warranty.

When a second one suffers the same fate, you curse Cambridge Computer and stump up for an out-of-warranty repair.

When a third machine starts to fry your lap and smells of hot plastic, you begin to realize that there's something not quite right, and it's time to rip the machine apart and find out what's wrong...

I should say at this point that I wasn't unfortunate enough for this to happen to my own machine each time -- the first was a very early Z88 that was mine, the second belonged to the purchaser of one of our Topper covers (who wanted to know if the Topper was responsible!), and the third machine belonged to a BBC Production Assistant who was in Hawaii at the time she called me for help!

So, when the third machine came back from Waikiki Beach, I decided to take a look. It was completely dead, and had apparently been suffering frequent soft resets shortly before the final gasp. I applied the usual first lines of resuscitation - new batteries and some engineering impact tests (I thumped it!). In an instant, the machine... remained dead.

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**THINKz V1.2 - Its here and it works.** File handling improved  
THINKz file handling has been re-written. When a new THINKz model is opened, it will be created on the default directory as defined in the panel. But new for Ver 1.2, the whole file name may be entered at creation time to include a RAM address and sub-directory.

## New zBASE applications

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Recently came across a new application for zBASE involved with personnel selection. Not only will such a system short circuit some form filling, it will also provide the interviewer with indications of the sorts of questions which might give the applicant an opportunity to really shine.

## Other applications

### Radio script writing (THINKz)

although it is only a variation on a theme, it does confirm the strength of the theme.

#### The start

The introduction section does all the things required like tell the listener who is speaking and the subject today.

#### The middle

All substance appears here. The bit in the middle.

#### The end

Then of course, the credits and the trailer for the next edition.

Creating application software has many starting points. Usually the real beginning is the identification of a need. After that, the following pattern is quite flexible and effective.

Menus - database design can start at menus.

#### Installation menu

Setting up the files and sub-directories

#### Data entry

For each database and look-up table e.g. account files and transaction files

#### Reports

How is the data to be sorted and shown on reports.

#### File maintenance

With more space and time, the above outline could be expanded into a full size article. With the help of THINKz, even the reader is better off. Same information, condensed form making the reading faster. Naturally, if the opportunity came along, each section could be filled out to fill the space available.

As always, keep those laps warm with a Z88 at all times.  
Tony Kaye

Product Enquiries: Please Call 030381 3883

A few seconds later, the new battery cells were doing a fair impression of an old-fashioned hand-warmer, and an instinctive flick of the machine removed the batteries smartly (and neatly shuffled them with the old set lying on the desk). It seemed likely that something was completely shorting the batteries, and being a fresh set of Duracells, they were giving it their all.

I removed the many screws that hold the machine together (NB for newcomers: two of them are under the black rubber feet at the front) and lifted it apart. It was immediately apparent that the battery contacts had been very hot and had melted their plastic mountings to such an extent that the batteries were very loosely gripped. This poor contact was now the point at which the heat was developed, but that didn't explain the original cause of the excessive current. I moved the loose connecting wires around a little hoping to see some stray strand of wire or a connector causing a short-circuit, but nothing was obvious.

Time to try the batteries in again. This is easier said than done when the machine is open with its keyboard and display dangling like surplus organs during abdominal surgery, and of course the battery holder opens on the underside of the machine. However, a few dislocated knuckles later, the batteries were in, and... yes, it sprang to life. I was pretty certain now that the fault was a mechanical short-circuit somewhere, rather than a faulty component, but would I be able to find it again, having disturbed it sufficiently to clear the fault?

Well, to cut a long story short (about time, you're thinking!), I did find the problem, and I thought it was worth passing on to those members who aren't squeamish about taking a screwdriver to their Z88s!

I haven't opened a lot of machines to see if this applies to all of them, but the ones I looked at covered a fair spread of production dates.

There are a couple of black wires carrying power almost from one side of the machine to the other, just under the area where keyboard and screen bezel meet. When the Z88 is assembled and screwed shut, those two wires can easily be trapped very tightly together between the case and internal parts. All had been well for many months, but the wires in question are solid-cored with thin pvc insulation, and, in time and with vibration, the conductors had

forced themselves through the insulation and shorted together, with the above-described results (ie: smoke, heat, and a look of alarm and despondency on the owner's face as she checks the warranty card).

After I had reinsulated the wires and straightened and tightend the battery connectors as best I could, all was well, and -- touch ABS -- the machine is fit and well again.

So, if you feel competent, and your machine is out of warranty, you could open it and make a preventative check on the wires -- but be very careful when you reassemble it not to commit the same mistake yourself! Personally, I would rather say to hell with the warranty, for the peace of mind of knowing that my Z88 is not going to cause a melt-down in the briefcase.

Unexplained, frequent soft resets, especially while typing, might be owing to dirty or loose battery connector springs, but they might be a warning of impending disaster. If you do have the misfortune to be faced with a smoking Z88, get the batteries out quickly, and, again, have a look inside if you feel able. You could save yourself a £50 repair bill!

PS: while you've got the display bezel removed, used a screen wipe to give a good cleaning to that awkward edge where it covers the keyboard and traps biscuit crumbs etc!

## Software Review - Z88 Golf

**by Michael W. Hey (0703)**

When I was a lad at school the nadir of my week was the miserable two hours spent on the football pitch. Without my spectacles I could not even find the goal, never mind locate and kick a moving ball. Any opportunity to escape from the field was welcome.

When I reached the fourth year I was introduced to golf. This was much more civilised: you could play properly clothed for a start, instead of rushing round dressed ridiculously in shorts.

Now reluctant sportsmen like me do not even need to go out of doors, because someone at Wordmongers has written a golf program for the Z88!

To start the game you execute a CLI file called "golf" supplied on the EPROM. This fetches all the other files from the EPROM automatically and then RUNs the BASIC program. This CLI does not work awfully well - on my Z88 it went (for some unknown reason) into the Panel and messed about with the serial port baud rate settings. However a better CLI could easily be written and saved on the EPROM instead (there is enough room for one there).

Also the files are all placed in :RAM.-, a potentially suicidal course of action. On the strength of the CLI one would expect the game to be badly thought out and full of bugs. Happily, this is not the case.

One must appreciate that game designers face a difficult task: if a game is too easy players soon get bored, too difficult and they become discouraged. I think that Transworld Golf gets the balance about right.

"Z88 Transworld Golf" uses the best implementation of graphics that I have ever seen on my Z88. The opening screen mixes text and graphics (a golf-ball on a plastic tee) and as you play the game a rather natty plan of each hole is drawn out. These plans are very effective, and are well laid out across the Z88's long thin screen.

First you select a course. You may choose from Augusta National, Georgia, and Kemper Lakes, Illinois (in the U. S. A.), or from Royal Troon and the Belfry (in the U. K.), or a made up course called "Fantasia". The sixth selection ("Shadowlands") picks holes at random. (A quick bit of maths indicates that there are 90 holes altogether.)

When you start to play the the graphics get really splendid! First a plan of the hole is drawn out, with a key to the left showing which pattern depicts the tee, green (with little flag), rough, bunkers and water hazards. First you are invited to select a club. A row of little clubs is drawn, with the name below each, and the cursor keys and ENTER are used to make your selection.

Then you have to take aim (or what ever real golfers call it). An indicator moves briskly up and down the sides of the plan, and pressing the space bar stops it. This selects the direction the ball will take. Some practice is required to get this right. At first the ball usually shoots off into some hazard or other, but after a while a more reliable aim is achieved.



Finally you must select the length of swing. The space to the left of the course plan shows a swinging golf club. Pressing the ENTER key makes your selection, but this demands split-second timing or the club will have swung past the point you want.

As soon as the enter key is pressed the ball moves across the screen in the direction you have chosen, straight towards the green (you hope). The length of your shot depends on the length of the swing and the club you have chosen. In order to help there is a "lie of the ball" indicator to the right of the screen, together with distance to the "pin" (i.e. the little hole with the flag stuck out of it.)

Depending upon the accuracy of your shot the ball sails down the fairway, or lands in the rough, or up a tree, or sinks without trace into a water hazard (in which case the shot must be re-played). If you make an embarrassing mess of a hole the escape key allows you to chicken out and return to the tee.

Sooner or later your ball will land on the green. The screen is re-drawn to show yourself armed with a putter and a look of earnest concentration. You must select the correct power of putt to propel the ball into the hole. A power indicator on the left of the green oscillates up and down and pressing the ENTER key halts it. A nice animated sequence shows the player putt the ball, which trundles across the screen towards the hole. If your judgement was correct the ball disappears down the hole and the player raises his arm in triumph!

Throughout play the score is displayed either in a window on the right of the screen (or on the bottom line whilst putting). All the scoring and adding up, and how many shots under or over par and how-many-yards-to-the-hole are all automatically calculated and constantly updated - as you would expect where there is a computer involved.

The game can be played by either one or two players (no foursomes, unfortunately). It is easy for the wrong player to play a shot - a small number is all that indicates who is to play next. As in "real" golf, after teeing off it is the player who is furthest from the hole who plays the next shot and so the game becomes more and more like musical chairs.

If you want to show off you can even play several games simultaneously, like a chess grand-master.

The graphics can become corrupted if you try this, because the program re-defines some of the graphic characters for different stages of the game, but it is still great fun.

As the Club's Chief Program Destroying Expert I am pleased to announce that this program is very hard to de-rail. Because it only responds to the cursor keys, plus ENTER, ESCAPE, SPACE, "1" and "2", it is not possible to crash it with invalid input (it ignores all the other keys).

Details of the various courses are held in appropriately named files. If one is missing the program reports that it cannot find that file. While the program is running the files are marked "In Use" and cannot be deleted.

Z88 Golf can be suspended at any time, so if you are amusing yourself at work, and someone inconsiderately interrupts you your Diary or PipeDream are instantly available, and you can resume the game later exactly where you left off.

One little gripe: the \*NAME command is missing, so the 'Your Ref.' column in the Index displays the name of the last program to update it. (This could easily be remedied in a revised CLI automatic-loading routine without having to change the BASIC program at all.)

A very minor criticism about the overall style is that all the holes are as flat as pancakes. No slopes or hills can be found anywhere. I think am being rather over-critical here: there is a limit to the realism that can be squeezed out of a Liquid Crystal Display, after all.

On the whole this program runs very smoothly - I was most impressed. Drawing the plan of each hole is rather slow (this is BASIC after all!) but thereafter the action is impressively fast! If your hand/eye coordination is not finely tuned you will send the ball whizzing all over the screen.

This is an ideal game to play indoors when the weather is horrid (you can carry your Z88 to the 19th hole and impress your friends) or you can sit in the garden if the weaher is nice. And at only £25 Z88 Transworld Golf is much cheaper than a set of clubs! Highly recommended!

Z88 Transworld Golf is available from all Wordmongers stockists, price £25.00.



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Bob Shore

# Software Review - RangerLink

Just to clear up any confusion before the review proper, RangerLink was previously called LexLink-C, as mentioned in Newlines Vol 4 No 6. LexLink-C has been renamed RangerLink, a name more suited to its wide appeal.

What we have here is a super PC-Link. Ranger were conscious of two main problems with the existing CCL PCLink II. Firstly, the program was slow in transferring files, mainly due to the cumbersome (although very reliable) transfer protocol, which effectively checks every single byte of the file during transfer. The other main complaint was that PCLink II can only handle individual files. Each filename has to be chosen from the menu, and that file must be transferred before the next file may be chosen, and so on. This makes backing up the entire contents of your Z88 (something which we all do regularly, of course) a very slow and laborious task.

Ranger had already developed a file transfer protocol for their RangerDisk disk drive system, which they knew was considerably faster (but just as reliable) as the protocol used by PCLink II. They had also been commissioned by the Ministry of Defence to write a file transfer package from the Z88 to the LEX word processor, widely used in areas of the MoD.

When the LexLink package was finished, it became apparent to the happy Ranger crew that they had created a two-headed beast; what was happy masquerading as a program-specific MoD utility was also eminently suitable for general file transfer duties between the Z88 and PC. So was born RangerLink.

When you get your copy of RangerLink, it looks at first sight rather like the CCL PCLink package. This is not surprising, since it IS the normal PCLink II pack, but with some important Ranger additions. These are the fact that the EPROM contains TWO applications - LINK and RANGERLINK, (the former being the original PCLink II, included for compatibility reasons) and the floppy disk for your PC also contains the old PCLink II as well as RangerLink.

Approaching the package in this way, Ranger are giving the user the best of both worlds - the speed and ease of use of RangerLink, with PCLink II there for compatibility, and including the PCLink file conversion programs to and from WordStar and Lotus 1-2-3. As with the normal PCLink II package, it also comes with either an XT- or AT- compatible serial lead, and a comprehensive manual.

In contrast to PCLink II, where the entire file transfer operation is controlled from the PC end, with RangerLink control is passed to the Z88. When firing up the program, the user is presented with a simple instruction screen on the PC, and a full-screen display on the Z88 consisting of three windows. On the left are the RangerLink commands, in a Filer-like window. In the middle is the Z88 directory, and on the right the PC directory.

File transfer is accomplished very simply. Mark the file you wish to transfer by pressing ENTER, and select the transfer command from the command menu on the left-hand side. While the file is being transferred the progress is displayed in the right-hand window, counting up in 1k increments. To transfer more than one file is simply a matter of following the above procedure but marking any file after the first with TAB. The clever bit now. If you want to transfer a whole directory on either machine, <>ENTER will mark all the files in the window. This makes machine backup a breeze.

Unlike PCLink, which in my experience is sometimes a little difficult to start, (the PC and Z88 don't seem too friendly!), with RangerLink the communication is both ear-instantaneous and very tolerant. If you unplug either end of the link, or use other applications on either machine, the program sits there quite happily waiting for the connection to be re-established. The amazing thing is that you can even do this when the program is halfway through a file transfer, and still it copes without losing a byte!

Now the nitty gritty. does RangerLink accomplish its goals of speedier reliable transfer, allowing multiple file transfer easily? Yes, without any brickbats. The table below shows that RangerLink is considerably faster than PCLink II - the speed improvement increases with the file size.

| File Size | PCLink II | RangerLink | Speed Improvement. |
|-----------|-----------|------------|--------------------|
| 1k        | 0:24      | 0:10       | 2.4x               |
| 17k       | 3:00      | 0:40       | 4.5x               |
| 64k       | 10:24     | 1:57       | 5.33x              |

In conclusion, if you need to transfer files to a PC environment, RangerLink is the state of the art at the moment. If you already use PCLink II to any degree, you will definitely save time and effort if you change to RangerLink. Highly recommended.

RangerLink is available from Ranger Computers Ltd of Northampton, price £49.50 + £2.50 postage + VAT. For existing users of PCLink II Ranger are offering an upgrade service for £30.00 + VAT. You need to send Ranger your PCLink II EPROM and the ORIGINAL floppy disk supplied with the package. Ranger will then add RangerLink to both the EPROM and floppy disk and return them to you. The existing PCLink II programs will still remain. Contact Ranger on 0604 791064 for more details.

## CLI Library Update

Here are the latest additions to the CLI library - three programs written by Larry Palmer (3089). They should be of interest to BASIC programmers who like to edit their work in PipeDream.

**X017 list.cli** which LISTs a BASIC program, and loads it into PipeDream ready for editing, automatically deleting :RAM.-/S.sgn as soon as it has been used.

**X018 exec.cli** transfers the edited program into BASIC and RUNs it, deleting temporary files as it goes.

**X019 spool.cli** which uses the (undocumented) LIST IF feature of BASIC, to produce a listing which only has lines containing a specified word.

There is a full list of executable CLI files which costs 22p (i.e. please send an extra 22p stamp!). Requests should come to me, not to Ian Braby!! (or Roy Woodward!).

Selections are available on EPROM, paper (short files only), XOB discs (not IBM, MAC, etc., etc.) or Z-Tape (as a last resort).



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# Small Ads & Swapshop

This service is FREE to members. Please send your Ad to the club Address on page 2. Please keep them as short as possible, and bear in mind that due to printing lead times your ad may not appear in the issue immediately after you submit it.

## **\*\*FOR SALE\*\***

Z88 COMPUTING, USING YOUR Z88, Z88 DABHAND GUIDE BOOKS, ALL 3 FOR £15, OR WILL THROW IN A 32K RAM, IN EXCHANGE FOR A 128K RAM. CALL 03224 37464 AND ASK FOR "JACK". (NOT MABLE)

## **\*\*FOR SALE OR EXCHANGE\*\***

LINK PACKAGES FOR BBC AND PCW, DATATRONICS MODEM AND MODEM-88 PROGRAM, SINCLAIR'S BOOK. WANTED - SPELL CHECKER, MORE RAM OR EPROM. RING JOUN BEVAN ON 0992 582439.

## **\*\*SWOP\*\***

128K RAM (UNUSED) FOR A 128K EPROM IN SERVICABLE CONDITION. TEL: 0329 834037 - MIKE HUGHES.

## **\*\*WANTED\*\***

EPROMS WANTED BY A NEW Z88 OWNER IN GERMANY. I AM ENGLISH SO PLEASE WRITE GIVING DETAILS OF ANY EPROMS YOU DONT WANT. ADRIAN JOICE, GEILENKIRCHEN SCHOOL, RAF DETACHMENT, BFPO 42. POSTAGE IS THE SAME AS UK INLAND MAIL.

## **\*\*FOR SALE\*\***

Z88 + 512K RAM. THREE 128K EPROMS. MAINS ADAPTER. PRINTER INTERFACE. EPROM ERASER. SUPERCHIP III (ZTAPE, ZBASE, ZTERM). PC LINK II. TOPPER. CARRY CASE. Z88 COMPUTING. BBC BASIC BOOK. EPROM BACK ISSUES. £450. CALL GORDON ON 0782 634406.

## **\*\*FOR SALE\*\***

2 X 128K RAM £20 EACH. 32K RAM £7. 2 X 128K EPROM £20 EACH. 32K EPROM £7. MAINS ADAPTER £3. EPROM ERASER £12. PRINTER CABLE (FOR CITIZEN) £5. Z88 COMPUTING £3. Z88 MAGIC £5. CLUB MAGAZINES VOL 1,2,3,4 £10. DEFUNCT Z88 (NEW KEYBOARD) £5. OR £99 THE LOT. ALL PRICES PLUS POSTAGE. PHONE JON ON 0823 251546.

**NEXT ISSUE OUT LATE NOVEMBER**

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# HiTEK Marketing

72 Longmoor Lane, Breaston, Derby. DE7 3BB

**\*\*STAR BUY OF THE MONTH\*\*** For all orders received by 30th November 1990

Personal 80 Mobile Printer - £175.00  
Personal 80 Mains Printer - £110.00

Serial interface for the Z88. Includes Z88 adapter and 25 pin standard lead. See review in March '90 Z88 EPROM or send SAE.

## Books

Z88 PipeDream -  
A Dabhand Guide £14.95  
Z88 Magic £14.95

## Wordmongers Software

ZBASE £69.00  
ZTerm £50.00  
ZTape £50.00  
EAzY Money £69.00  
Golf £25.00

## PC Link II - £34.00

Please state whether 9 pin to 25 pin cable or 9 pin to 9 pin cable is needed

## Kodak Diconix 150 Plus Printer

Top quality inkjet printer, complete with mains adapter, rechargeable batteries and carrying case. - £390.00  
Extra Inkjet Cartridges £16, 3 for £39.

## \*\* SUMMER SPECIAL\*\*

Z88 All in One Pack with  
FREE EPROM Eraser and  
32K EPROM - £280.00

## Ni-Cd Battery Holder

To run your Z88 on low-cost rechargeable batteries.

Battery Holder for 5 cells - plugs into your Z88 - just £4.95

5 Quality Rechargeable Batteries - £6.95. Charger - £7.95

SAVE £1.90 on complete kit of Holder+Batteries+Charger - ONLY £17.95

|                 |         |                |        |
|-----------------|---------|----------------|--------|
| Z88 Computer    | £229.95 | Parallel Cable | £29.00 |
| Mains Adapter   | £10.00  | Serial Cable   | £10.00 |
| 32k RAM Pack    | £20.00  | Topper Cover   | £7.75  |
| 128k RAM Pack   | £50.00  | Carrying Case  | £10.00 |
| 512K RAM Pack   | £200.00 | BBC Link       | £23.00 |
| 32k EPROM Pack  | £20.00  | Atari ST link  | £19.95 |
| 128k EPROM Pack | £50.00  | Lead for Atari | £12.95 |
| EPROM Eraser    | £40.00  | Spellmaster    | £56.00 |

Z88 Users' Club EPROM vouchers given with all the above except Star Buy of the Month. One voucher worth one issue of "Z88 EPROM" for each complete £50 spent per order. Vouchers are valid for one year and can be used to join the Club or to renew membership.

All prices inclusive for UK despatch only. Cash with Order.

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